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All About Personal Computers

An all new unbiased report from Datapro

15 Most Popular Personal Computers:

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Atari 400 & 800	Mattel Intellivision
Commodore PET	North Star Horizon
Compucolor II	Ohio Scientific Challenger
Cromemco Z-2 Systems	Series I & II
Exidy Sorcerer	Radio Shack TRS-80 Model I
Heath H8 & WH8	Texas Instruments 99/4
Heath All-In-One Computer	Home Computer

All About Personal Computers is valuable information for anyone considering the purchase of a personal computer. This all new report is completely up-to-date and features many elusive, hard to find facts. Specially prepared by Datapro Research Corporation, it is available for only $25.

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NEW REPORT on PERSONAL COMPUTERS

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May 1980

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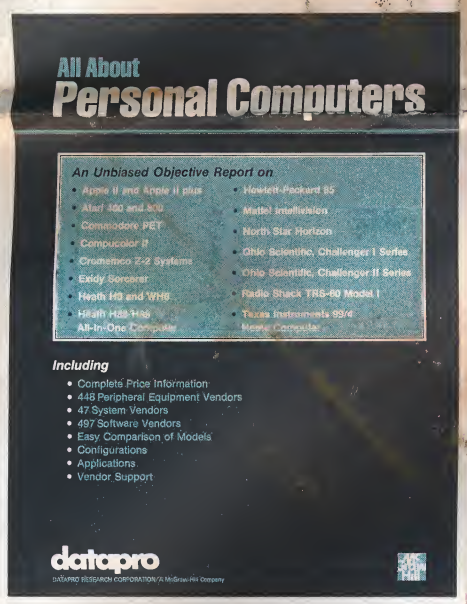
Volume 5, Number 1 May, 1980

A periodic briefing on Datapro products and services for those who value information

Datapro Gets Personal About Computers



All About Personal Computers is a major new feature report from Datapro covering 15 of the most popular systems and this growing market place.

Would a personal computer improve your office operations? Possibly augment your current information processing resources?

If you're contemplating these questions, or just concerned about where this emerging industry segment is going, you should examine Datapro's new feature report *All About Personal Computers*. Datapro estimates that the total personal computer marketplace will grow from the approximate 400,000 unit base in place at the end of 1979 to about 1.8 million installations by the end of 1985. Business applications, in general, will be among the most important future areas of usage for personal computers.

To help the potential owner/user determine which system will be most suitable for his needs, Datapro has analyzed the active and growing personal computer industry and reported for the first time on 15 of the most popular systems currently available with the broadest range of practical applications. The systems covered include:

- **Apple II and Apple II Plus**
- **Atari 400 and 800**
- **Commodore PET**
- **Compucolor II**
- **Cromemco Z2 Systems**
- **Exidy Sorcerer**
- **Heath H8**
- **Heath All-In-One Computer**
- **Hewlett-Packard HP-85**
- **Mattel Intellivision**
- **North Star Horizon**
- **Ohio Scientific Challenger I Series**
- **Ohio Scientific Challenger II Series**
- **Radio Shack TRS-80 Model I**
- **Texas Instruments TI-99/4 Home Computer**

All About Personal Computers contains vital data on these current models, including prices, typical configurations, popular options, number of systems installed, main application areas where systems are used, and extensive, detailed characteristics of each major peripheral and software product provided by the vendor for his system. Warranty and discount information are also given.

The report includes never before published directories that list 47 additional manufacturers of personal computers, 448 independent sources of peripheral products, 497 software package vendors, a well as the most popular periodicals covering the personal computer industry. Among the peripheral manufacturers listed are makers of Winchester-style hard disks, 5¼" and 8" diskettes, printers, communications devices, digitizers, music synthesizers, speech recognition/generation equipment, plotters and more.

Here is a summary of what you will find in *All About Personal Computers*:

- History of Personal Computers.
- Current and Projected Market Sizes.
- Current Applications.
- How Personal Computers are Sold.
- Who Uses Personal Computers.
- Future Trends.
- How to Buy a Personal Computer.
- Complete Price Information
- Easy Comparison of Models
- Configurations
- Vendor Support

Anyone considering the purchase of a personal computer will find this report extremely worthwhile. *All About Personal Computers* is available at $25. You can order by Reader Service Card, write or call.□

SC20-100-101
Personal Computers

Apple II and Apple II Plus

The Apple II configured for fairly typical home use, with single disk-drive drive and TV set for color graphics monitor. Not as commonly used is the graphics tablet shown here, capable of producing high-resolution, multi-colored drawings.

Current models: Apple II, Apple II Plus.
Memory: 16KB-48KB RAM; 116KB-1.6MB diskette.
Base list price: #1,195-#1,498 (processor/memory).
Typical list prices: about #2,000 (student)—32KB RAM and mini-diskette; about #8,000 (business)—48KB RAM, two mini-diskettes, B./W video monitor, printer, "Controller" business software.
Primary uses: color graphics applications, professional offices, education, home/hobby, small business.
Popular options: from Apple—graphics tablet; Independent sources—wireless home controller; music synthesizer; voice recognition system.
Principal programming languages: BASIC, PASCAL.
Principal applications software: Dow Jones, "Controller" business system, point of sale.
First shipment: Apple II—1978; Apple II Plus—1979.
Number installed to date: about 88,000.
Available through: about 650 dealers nationwide.

BACKGROUND INFORMATION

Manufacturer: Apple Computer Inc., 10260 Bandley Drive, Cupertino, CA 95014. Telephone (408) 996-1010.

Apple Computer Inc was formed in January 1975, and its first product, the Apple, was introduced in 1977. The present product lineup consists of the Apple II and Apple II Plus. Each is provided with a different version of BASIC in ROM. Apple II Plus has a floating point BASIC while Apple II uses an integer version of BASIC. Apple II Plus enhancements also include an Auto-Start ROM chip for automatic disk loading, reset protection and screen editing.

To date, about 55,000 systems of all types have been sold through more than 650 dealers (about two-thirds of which are designated Level I service centers, capable of making minor repairs). List prices for 16KB, 32KB, and 48KB Apple II or Apple II Plus systems are $1,195, $1,345, and $1,495, respectively. Many dealers, however, offer discounts of up to about 15 percent for the Apple II and the memory modules used with either Apple system.

Over 30 Apple users' groups have been formed. The large and active Apple customer base, exceeded only by the Commodore PET and Radio Shack TRS-80 in size, and second only to Radio Shack in dollar value of personal computers shipped, has spurred the establishment of a major sub-industry of independent hardware and software vendors who are actively creating products for Apple owners. (Please refer to Section 3 for a listing of these firms.)

SYSTEM CHARACTERISTICS

The Apple II is designed with eight expansion slots inside the keyboard chassis for plug-in system expansion modules, eliminating the need for a separate expansion chassis. Each slot can accept an interface/controller card capable of attaching a peripheral or I/O subsystem. Memory is expandable from 16K bytes of RAM to 48K bytes in 16K increments by inserting RAM chips into available sockets on the main board. Each Apple system also includes 8K bytes of ROM, with extra sockets capable of holding an additional 4KB. The Apple II also has a built-in cassette tape interface, and a built-in speaker can be programmed for single-voice music, synthesized speech, and video game sound effects.

The system does not come with either a display screen or a printer. A variety of printers are available directly from Apple, or Apple provides an interface card for attaching printers from independent sources. The user must furnish his own display screen, which is often a color TV, permitting use of Apple's popular color graphics feature.

Although the majority of presently installed Apple computers have found their way into home use, an ever-increasing number of systems are being used for business applications. The unusually rich complement of business software and the variety of high capacity peripherals available for the Apples make these systems ideal candidates for professional or very small business offices. Minimum systems (16KB RAM, $1,195) can be used in the home for entertainment and some limited number of domestic applications. Full-scale systems costing as much as $5,000 or more (consisting of a 48KB RAM Apple II Plus with two disk drives, a B/W video monitor, a printer, and the "Controller" business system software package) can support a variety of programming languages, data management needs, on-line access to powerful commercial data bases, and general business applications for firms with sales in the $1 million to $25 million range. ▷

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All About Personal Computers features detailed product descriptions, including features, functions and more.

Just Released:

Datapro's 1980 *User Ratings of Computer Systems* features over 4500 ratings of mainframes, minis, micro, and personal computers. Datapro's latest, most comprehensive user survey. See page six.

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Datapro Applications Software Solutions: Problem Solver for Today's Manager

How can today's automation-oriented manager achieve maximum progress and performance, take the surest and easiest paths in solving problems, anticipate future problems and take steps to adjust plans and systems before negative results occur? Many of the answers can be found in *Datapro Applications Software Solutions*—the latest member of our popular *Solutions* Series. This new service is generating considerable interest among EDP professionals and others involved in automating their organization's operations. *Applications Software Solutions* is a results-oriented service that provides a simple, yet comprehensive "how to" approach in solving many of the problems that arise when applications software is utilized.

Among other things, *Digest* readers can find help in design, implementation and management of software systems. The two-volume information service offers solutions to creating and managing applications portfolios, improving the computer applications development cycle, designing user-oriented interactive software, reducing the costs of software maintenance and revision, applying database technology effectively, and more.

Datapro Digest readers who are already familiar with the popular *Datapro EDP Solutions*, *Automated Office Solutions*, and *Communications Solutions* will find that *Applications Software Solutions* utilizes the same successful problem-solution format. Some of the topics covered are:

- Where to start; finding out where applications software can help you most, and justifying the cost.
- Guidelines to help you decide whether to develop your system in-house or to buy.
- How to prepare for software procurement; how to select and deal with software vendors, and evaluate their proposals and support programs.
- How to prepare for and manage software installation, debug, enforce proper documentation, and maintain the system.
- How to get maximum return on your software investment—in terms of dollars and performance.

Datapro Applications Software Solutions begins with Software Development Concepts, then guides you through Software Products, and how they pertain to various industry-specific applications. There are more than a dozen other major sections that cover such critical topics as Planning and Cost Justification, Make-or-Buy Tradeoffs, Software Design and Production, Selection and Acquisition, Reliability and Vendor Support, Installation and Testing, Performance Measurement, Future Systems and Software Programming trends.

Whether you are concerned about software development, packages or both, *Datapro Applications Software Solutions* will answer your day-to-day questions based on the most recent viewpoints and facts. Subscribers will receive two looseleaf reference volumes, along with twelve monthly supplements reflecting applications software state-of-the-art, twelve monthly newsletters to provide information on the latest developments in programming trends, and Datapro's telephone inquiry service. *Digest* readers may review the complete service for 30 days with no purchase obligation under Datapro's popular Trial Subscription Plan for just $15. The annual subscription fee is $330. To review use Reader Service Card, write or call.□

Report Compares 22 Plug-Compatible Mainframes

In less than six years, the IBM plug-compatible mainframe computer business has grown from zero to a billion-dollar-a-year market. Currently, vendors are selling more than 20 models as direct replacements for IBM's aging System/360 and System/370 computers.

When Amdahl Corporation introduced the first plug-compatible mainframe in September 1974, the emphasis was on providing more up-to-date technology at a lower price. As IBM has introduced new processors such as the 303X and 4300 series, the tremendous success of these products has given the plug-compatible vendors a third selling point—quick delivery compared to the long waiting times for IBM products.

Designed to help users put this new market in perspective, a new report from Datapro Research Corporation compares the characteristics of 22 plug-compatible mainframes from seven vendors. Reprinted from the January supplement to *Datapro 70*, the report, *All About Plug-Compatible Mainframes*, describes the growth of the industry and the vendors now in the market and then compares the various models, feature by feature, in 12 pages of charts.

To order your report at $15 per copy, use the Reader Service Card, write or call.□

Fourteen U.S. Speakers Selected for IFIP '80

Speakers from several countries, including 14 from the U.S., will participate in the Eighth World Computer Congress (IFIP '80) to be held in Tokyo, Japan, from October 6 to 9, 1980, and then in Melbourne, Australia, from October 14 to 17.

Serving on the Marketing Committee, Datapro has worked toward the goal of assisting the International Federation of Information Processing with maximizing U.S. participation.

U.S. speakers representing the American Federation of Information Processing Societies (AFIPS), will address subjects ranging from *Computer Architecture and Hardware to Computers in Everyday Life.*

The triennial Congress provides a forum for the international exchange of information among developers and users of information processing technology. Information about registration may be obtained from AFIPS, 1815 North Lynn Street, Suite 800, Arlington, VA 22209, (703) 243-4100.

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More Datapro Seminars Offered

Datapro's popular seminar series continues to attract wide audiences. The Datapro integrated seminar program expanded from last year, includes the following seminars:

- Data Communications
- Teleprocessing Software
- Distributed Systems
- Systems Analysis and Design
- EDP Project Management
- DBMS
- Minicomputers
- Tuning-Up the EDP Function
- Data Processing
- EDP Operations
- Operations Management
- Computer Performance Measurement
- Word Processing
- Office Automation
- Electronic Mail
- Systems/Organizational Productivity.

FREE SEMINAR CATALOG

Send for your free Datapro Seminar Catalog which outlines course content, dates, locations, fees, instructor profiles and more—to help you select the Datapro seminars that meet your professional needs. Just dial our convenient toll free number (800) 257-9406 for a catalog and enrollment information.□

Datapro on the Road

Several exciting trade shows are coming up. At Datapro we look forward to these opportunities to stay abreast of new computer products and trends, and most importantly, to meet old friends in the industry and make new ones. It will give you an opportunity to examine all of Datapro's information products at our booth, and further acquaint yourself with our newest services. Datapro will be participating in the following trade shows. We look forward to seeing you there.

TRADE SHOWS '80

NCC 80
Anaheim, CA 5/19-22
Anaheim Convention Center
Booths 1446, 1448

COMPUTER EXPO 80
Chicago 6/10-12
Merchandise Mart
Booth 1203

FEDERAL COMPUTER CONFERENCE
Washington, DC 9/22-24
Sheraton Washington Hotel
Booth 1541

INFO '80
New York 10/6-9
New York Coliseum
Booth 2423

Highlights of Current Datapro Services

Here's a brief sampling of what Datapro subscribers to our 13 different information services received in recent supplements. *Digest* readers may review any of the services in which these reports appear under Datapro's no-risk Trial Plan. Use Reader Service Card, write or call.□

Communications Processors are the subject of a completely revised report which includes the results of Datapro's recent user survey in which 201 users reported on 365 individual processors in *Datapro Reports on Data Communications*. Comparison charts at the back of the report present the features of 88 processors from 39 vendors.

The IBM 5120 Computer System announced in February as a replacement for the two-year old 5110, is suitable for a wide range of commercial and problem-solving applications in both small and large operations, and is available at a lower price than the 5110 desk-top computer. The advantages of this repackaged version of the 5110 are described in a new report in *Datapro Reports on Minicomputers*.

Software Design. In a recent supplement to *Datapro's Applications Software Solutions* (Process Construction Approach to Software Design), a design method is discussed that yields high payoffs to both small and large projects, especially where software is expected to be changed one or more times after it becomes operational.

System 2000/80 is a generalized data base management system now being marketed by Intel since their acquisition of MRI in 1979. Our report in the April supplement to *Datapro 70* reflects the change and also the new user reactions.

The XEROX 5600 introduced in October 1979, is now being distributed on a nationwide basis. Actually an enhanced version of the 5400, the 5600 features a Recirculating Document Handler and optional on-line finisher to increase productivity and make it a viable alternative to the low-volume placement of the Kodak Ektaprint Series and IBM Series III. The capabilities, features and pricing are examined in a new report in *Datapro Reports on Copiers and Duplicators*.

All About 108 User-Programmable Terminals defines a user-programmable terminal and discusses the features and functions of a broad range of equipment from portable teleprinters to multistation shared processors. This 36-page report provides specifications of 108 user-programmble terminals from 52 vendors and presents the results of a survey of Datapro subscribers with an installed base of 1,375 terminals. Selected from *Datapro 70*.

Dictation Systems free both the dictator and transcriptionist to perform these duties at their convenience, independent of each other. 150 units now on the market are reviewed in the April 1980 Supplement to *Datapro Reports on Word Processing*.

Electrical Power Problems present a serious threat to computer facilities. And, it appears highly unlikely that the problems can be solved by the electrical power industry in the near future. A new report, *Finding Solutions to Electrical Power Problems*, in the April Supplement to *EDP Solutions* presents an eight-step basic procedure for conducting a power study and for making the necessary managerial decisions to achieve the most desirable results.

The NCR 7750 Remittance Processing System is the subject of a new report in *Datapro Reports on Retail Automation*.

All About Plug-Compatible and Off-Line Printers discusses the relative advantages of impact and non-impact printing and provides data on usage patterns. Comparison charts list the features of 58 printers from 21 suppliers and a separate chart summarizes the ratings given 159 installed printers by their users. *Reprinted from Datapro 70*.

Internal Management Consultants now compete with their external counterparts for a share of management's problems and money. A new report in the April Supplement to Datapro's *Automated Office Solutions* discusses the case for the internal consultant, but shares some of the drawbacks as well as benefits of selecting this methodology.

Sony BM-750 Micro Corder the company's first microcassette desktop dictator/transcriber, and the smallest desktop microcassette unit on the market is featured in a new report in *Datapro Reports on Office Systems*.

Add-On Memory Users Happy. Asked to rate the overall performance of the add-on main memories they had installed, 88 percent of the users surveyed by Datapro rated them as good or excellent, according to a new Datapro report, *How to Select and Use Add-On Main Memory*. The report contains detailed comparison charts on 89 memory products from 13 vendors and discusses important considerations in selecting add-on and add-in main memories such as cost, delivery and capacity.

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Communications Solutions Very Popular

A little more than a year ago, *Datapro Communications Solutions* made its debut as the newest member of Datapro's popular Solutions Series. We're happy to report that in this short time, it has become one of Datapro's most widely used services for EDP communications specialists who look to *Datapro Communications Solutions* for answers to their planning and operational problems.

Planners, designers and managers of virtually all types of communications systems are able to benefit from the answers provided in this two-volume monthly-updated service which follows Datapro's successful, easy-to-use Solutions Series format.

In *Datapro Communications Solutions*, emphasis is placed on:

- how to plan, design and apply high efficiency communications capabilities for your organizations.
- how to evaluate and select the right communications services and equipment for your application.
- considerations involving personnel, facilities, operation, security.
- guidelines and proven strategies for more efficient and flexible communications.

Following an introduction to concepts and definitions, *Datapro Communications Solutions* explains and illustrates how best to use Narrowband/Voice-grade/Wideband Channels, Half-duplex/Full-duplex, Asynchronous/Synchronous, and Analog vs. Digital Transmissions, Protocols and Codes, Multiplexing/Concentrating, Switched vs. Private Line Services, and Public vs. Customized Private Networks.

(Continued on page 6)

Datapro Expands Three Information Services

To keep pace with the rapid growth of the office automation industry and the booming minicomputer and small business computer industry, Datapro has expanded its information services in Word Processing, Copiers and Duplicators, and Minicomputers.

MINICOMPUTERS

Datapro Reports on Minicomputers has been expanded to 3 volumes to provide for more dynamic coverage of the minicomputer and small business computer industry. New sections will cover emerging trends in the industry, and existing sections will be enlarged.

COPIERS AND DUPLICATORS

Datapro Reports on Copiers and Duplicators includes a new section, Electronic Copiers and Facsimile, with a section devoted exclusively to facsimile products. The primary reason for the expansion to two volumes was to allow for additional reports covering the many new products on the market.

WORD PROCESSING

A second volume has been added to *Datapro Reports on Word Processing*. This expands the service for our subscribers in two ways: by adding more reports within existing equipment categories, and by creating new categories to report on new developments in the word processing industry. The three newly-created sections are Electronic Typewriters, Communicating Word Processors and Electronic Mail, (which now includes Facsimile equipment), and Composition Systems.

13 INFO SERVICES

These information services are among 13 published by Datapro for the information processing and office automation industries, which are updated with monthly supplements and newsletters. *Datapro Digest* readers may obtain any of these reports on a 30-day trial basis for only $15. Use Reader Service Card, write or call.□

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Datapro Publishes Study on Microelectronics Marketplace

Datapro Digest readers including product developers, electronic engineers and OEM planning personnel should take note that sales of intelligent microelectronics components to the information processing industry will grow to $4.257 million in 1982, up 352 percent from 1979, according to a new market study by Datapro Research Corporation. Based on in-depth interviews with 18 semiconductor manufacturers and survey results from 479 buyers, Datapro forecasts that this sales level will be reached despite increasing competition for chips from other industries.

The study, *The Impact of Intelligent Microelectronics on Information Processing Equipment*, analyzes the present and future use of intelligent microcircuits (microprocessors, memories, and support circuits) in three types of equipment: data processing (microcomputers, minicomputers, and peripherals), office products (word processors, copiers, and printers), and communications (terminals, modems, and controllers).

Many information processing vendors are just beginning to discover the benefits of using microprocessors in their products, and this new interest will have a major impact on the semiconductor vendors. The study analyzes the factors contributing to the supply/demand relationships and their expected effects on the size and composition of the market in 1980, 1981 and 1982.

The study also analyzes the direct impact that intelligent microelectronic components are having on specific information processing products such as minicomputers, word processors, and terminals. Charts show which components are going into which products, who the leading suppliers are, and present and future market sizes.

VENDOR PERSPECTIVES

The Impact of Microelectronics on Information Processing Equipment profiles every major open-market semiconductor vendor, and analyzes data from extensive personal interviews and information from multiple sources. It examines foreign competition and its impact on the major U.S. suppliers. The vendors include:

- AMD
- Data General
- DEC
- Fairchild
- Fujitsu
- Intel
- Intersil
- Mostek
- Motorola
- Natl. Semiconductor
- NEC
- Rockwell
- Signetics
- Solid State Science
- Synertek
- TI
- Western Digital
- Zilog

FUTURE MARKET CHANGES

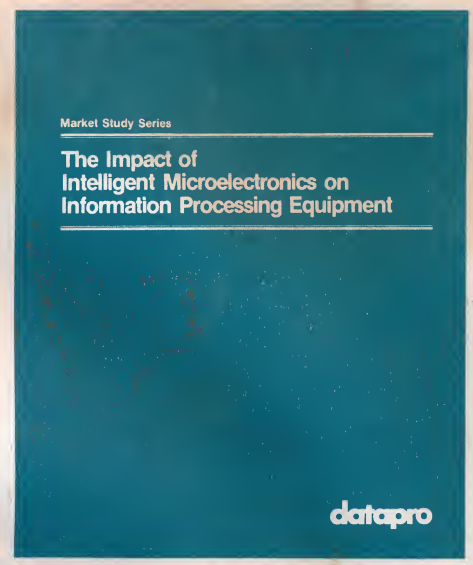
The microelectronic products available and the needs of the various users of these products will shift constantly over the next three years, and the study analyzes these changes through 1982, including projections for each year based on the data supplied by vendors and buyers. Estimates are given for the total information processing equipment market, the total semiconductor market, and the submarkets in which the semiconductor vendors sell intelligent microelectronics to the information processing equipment manufacturers.

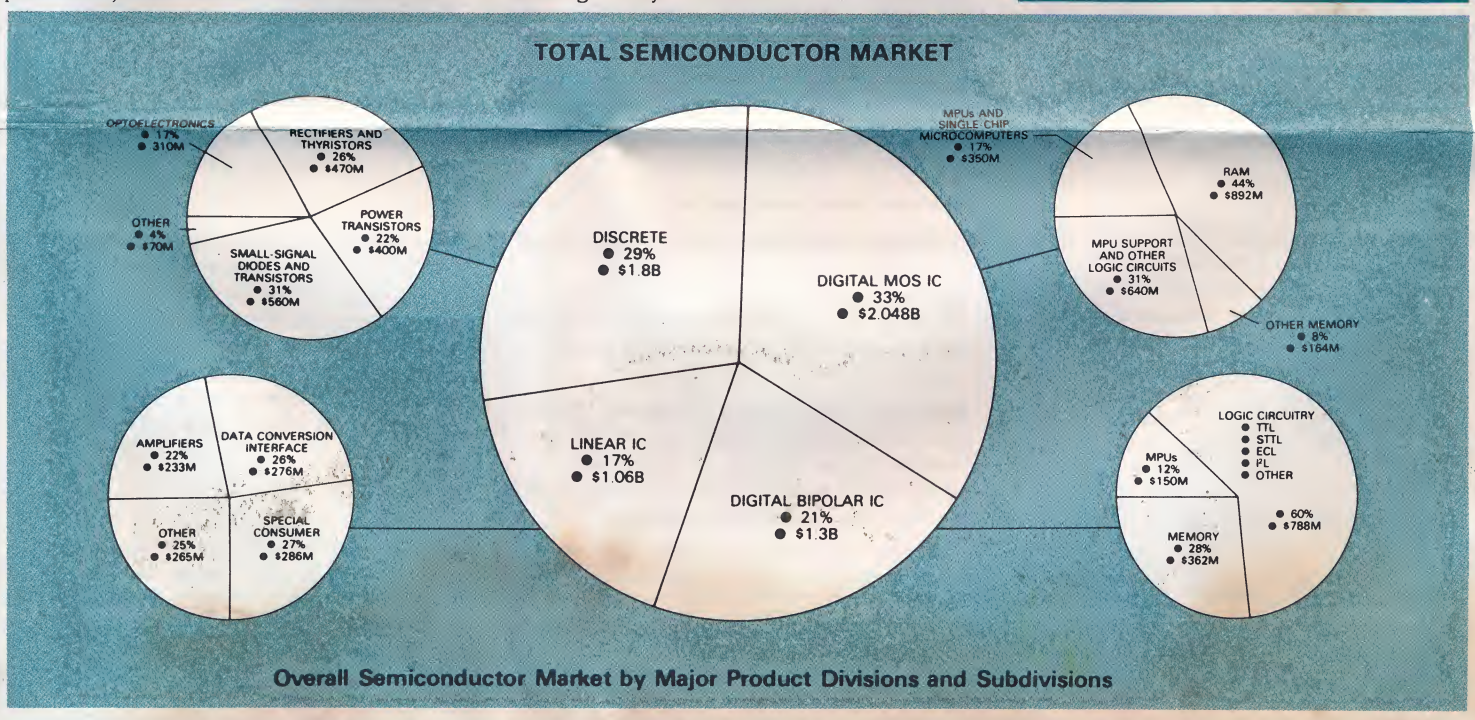
First in a new Datapro Market Study Series, the study projects a significant shift in the ranking of major semiconductor vendors based on the buying plans of survey respondents. The top four vendors in this market are currently Intel, Zilog, AMD, and Motorola.

SUPPLY & DEMAND

Because demand is outrunning supply and because the technology is changing so quickly, the buyers say that availability is much more important than price in choosing a product. Availability, in fact, also outranks support, suitability, and vendor prominence in making a choice, the study found. Several large buyers say they would consider making their own circuits if the market becomes too unstable.

The Impact of Intelligent Microelectronics on Information Processing Equipment is a unique market study by Datapro, and can be of significant benefit to your organization in planning for the future. *Datapro Digest* readers can take advantage of a special offer and acquire the Study at the rate of $390, by simply completing and mailing the convenient Reader Service Card, or call or write.□





Overall Semiconductor Market by Major Product Divisions and Subdivisions

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Datapro In More Than 80 Countries

In a continued effort to better serve the international community, Datapro has expanded its international operations. Subscription services are now offered in more than 80 countries, according to Datapro's David Hyatt, Director, International.

Datapro Services S.A., the European agent of Datapro Research Corporation located in Buchillon, Switzerland is responsible for sales in Europe, including the United Kingdom and Eastern European countries.

Thousands of international subscribers are supported by a dedicated and experienced editorial staff headed by Bob Patterson our Executive Editor, International, in Delran, New Jersey. Reporting to Bob is the Brussels, Belgium editorial operation where local European news is collected, analyzed and reported on for inclusion into the international versions of Datapro's widely-read reports.

David Hyatt

Bob Patterson

Datapro currently offers International editions of *Datapro 70, Datapro Reports on Minicomputers* and *Datapro Reports on Word Processing.*

With each of these three services subscribers receive a tri-lingual newsletter written in German, French and English; internationally oriented material in each monthly update; and a responsive telephone/telex inquiry service.

Datapro's International Operations are aggressively expanding, with several areas receiving increased attention, including Japan, Mexico, Brazil and South Africa.

Digest readers interested in our International editions may use the Reader Service Card and are also invited to contact Mr. Jan Berglund, Datapro Services S.A., CH 1164 Buchillon, Switzerland, Tel: (021) 76 37 31 Telex: 26495 or Mr. David Hyatt, Datapro Research Corporation, 1805 Underwood Blvd., Delran, N.J. 08075 (609) 764-0100.□

Users Rate Modems High, But. . . .

A recent Datapro survey found that users were generally pleased with modem equipment currently installed, but inadequate diagnostic capabilities proved to be their number one complaint. The complete results of this survey are published in a 52-page Datapro report, *All About Modems,* designed to guide you through the maze of selecting the modem best suited to your requirements from the extensive variety of types and models available from both independent suppliers and telephone companies. Survey results from 272 users with more than 26,000 installed modems showed that 94.4 percent were satisfied with overall performance, but only 60.5 percent were pleased with diagnostic capabilities.

There is help in sight, however, in the form of microprocessor-controlled modems which are expected to provide extensive diagnostic capabilities. It is anticipated that complaints will fade away when users install the new equipment.

We also asked users about problem conditions they encountered, the operating speeds they used, and modem features. The survey ranked line quality as the number one problem, followed by diagnosis of problems, line outages, and transmission errors. In operating speeds used, 4800 bits per second ranked highest, followed by 2000/2400 and 600-1800 bits per second. The most popular features were local diagnostics, auto answer, automatic equalization, multipoint, remote diagnostics and multispeed.

All About Modems is designed to assist you in comparing the specifications of more than 400 devices from 48 vendors, and to save you time with detailed easy to follow comparison charts of modem models. Reprinted from *Datapro 70,* the report is available for $15. To order, use Reader Service Card, write or call.□

Communications Solutions Popular

(Continued from page 4)

Eight other major sections explore System Components, Planning, System Design, Selection and Acquisition, Installation and Maintenance, Operations Management, Systems Management and Future Systems. Each section is covered with similar depth and scope. A listing of vendors & suppliers, communications standards and protocols, and an extensive communications glossary is also included. The extensively cross-referenced index and clear, straight-forward organization make finding solutions to daily communications problems fast and easy.

Hardware, software, networks, facilities and services are all covered with answers to day-to-day questions based on the most current viewpoints and facts. Subscribers also receive monthly supplements reporting on the latest management/technical strategies, methods and procedures as fast as they evolve. In addition, they have the added benefit of monthly newsletters and use of Datapro's popular telephone inquiry service.

Datapro Digest readers can stay in touch with the state of the art and benefit from the practical perspectives offered in this popular service. The annual subscription rate is $330 and it is available on 30 day trial for only $15. Datapro's standard no-risk trial plan permits subscribers to return the material if, for any reason, they are not completely satisfied. Use Reader Service Card, write or call.□

1980 Top Rated Systems

Datapro's 1980 Annual Survey of User Opinion of Computer Systems has just been published. Extensive tables summarize the experience of 4,614 users of desktop, personal, microcomputer, minicomputer, small business computer and general-purpose computer systems. User's ratings pinpoint strengths and weaknesses of each manufacturer's equipment, software, and support, and provide information that should be of great value in making decisions on computer acquisition.

Reprinted from *Datapro 70,* the complete report is available at $15. Use Reader Service Card, write or call.□